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IN THE CLAIMS

1. (currently amended) A field-effect semiconductor device comprising:
a channel layer;
a contact layer;
a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer and formed between the channel layer and the contact layer, the semiconductor structure having a first junction face between the semiconductor structure and the channel layer and having a second junction face between the semiconductor structure and the contact layer;
an ohmic electrode formed on the contact layer; and
a Schottky electrode formed on the semiconductor structure;
wherein ~~at least one~~both of the first junction face and the second junction face is are ~~an~~ iso-type heterojunctions; and
the semiconductor structure is composed of a single material and includes at least two semiconductor layers.

2. (currently amended) A field-effect semiconductor device according to claim 413, wherein the channel layer and the doped layer of the semiconductor structure at the first junction face are each n-type doped layers, and the contact layer and the doped layer of the semiconductor structure at the second junction face are each n-type doped layers.

3. (currently amended) A field-effect semiconductor device according to claim 32, wherein the channel layer and the semiconductor structure at the first junction face each have a dopant concentration of $1 \times 10^{18} \text{ cm}^{-3}$, and the contact layer and the semiconductor structure at the second junction face each have a dopant concentration of $1 \times 10^{18} \text{ cm}^{-3}$.

4. (currently amended) A field-effect semiconductor device according to claims 1 or 2, wherein the electron-affinity of the semiconductor structure is composed of a

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~~single material and has an electron affinity smaller than those of the channel layer and the contact layer.~~

5. (currently amended) A field-effect semiconductor device according to claim 3, wherein the electron affinity of the semiconductor structure ~~is composed of a single material and has an electron affinity smaller than those of the channel layer and the contact layer.~~

6. (original) A field-effect semiconductor device according to claim 4, wherein the semiconductor structure is composed of AlGaAs.

7. (original) A field-effect semiconductor device according to claim 5, wherein the semiconductor structure is composed of AlGaAs.

D | 8. (original) A field-effect semiconductor device according to claims 1, 2 or 3, wherein the channel layer is composed of InGaAs.

9. (currently amended) A field-effect semiconductor device according to claim 8, wherein the electron affinity of the semiconductor structure ~~is composed of a single material and has an electron affinity smaller than those of the channel layer and the contact layer.~~

10. (original) A field-effect semiconductor device according to claim 8, wherein the semiconductor structure is composed of AlGaAs.

11. (previously canceled)

12. (previously added) A field-effect semiconductor device according to claim 14, wherein the channel layer and the doped layer of the semiconductor structure at the first junction face are each n-type doped layers, and the contact layer and the doped

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layer of the semiconductor structure at the second junction face are each n-type doped layers.

13. (previously added) A field-effect semiconductor device according to claim 1, wherein the first junction face between the channel layer and the semiconductor structure and the second junction face between the contact layer and the semiconductor structure are iso-type heterojunctions; the channel layer and the semiconductor structure at the first junction face are each formed of doped layers; the contact layer and the semiconductor structure at the second junction face are each formed of doped layers; and the semiconductor structure includes an undoped layer intermediate the doped layers thereof.

14. (previously added) A field-effect semiconductor device according to claim 13, wherein the Schottky electrode is in contact with the undoped layer.

15. (currently amended) A field-effect semiconductor device comprising:
a channel layer;
a contact layer;
a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer, the semiconductor structure having at least ~~one~~ two layers;
an ohmic electrode formed on the contact layer; and
a Schottky electrode formed on the semiconductor structure; wherein
the semiconductor structure is formed between the channel layer and the contact layer, and where a junction between said layers of the semiconductor device is a heterojunction, the junction is an iso-type heterojunction.
